

## Claims

- [c1] 1.A precision location system between an actuator accessory and an operating mechanism in a circuit breaker, said precision location system comprising: a cover plate configured to receive the actuator accessory, said cover plate further configured to receive the operating mechanism, and said cover plate configured to align the actuator accessory with said operating mechanism when the actuator accessory and operating mechanism are received in said cover plate.
- [c2] 2.The system of claim 1 wherein said cover plate is configured having a defined cavity to locate said operating mechanism therewith, said cover plate is further configured with a location feature to position said actuator accessory thereto and align said actuator accessory with said operating mechanism.
- [c3] 3.The system of claim 2 wherein said location feature includes a location tab extending from said cover plate.
- [c4] 4.The system of claim 2 wherein said cover plate includes an alignment groove configured therein to receive an alignment rod extending through a plurality of cassettes and said operating mechanism, said alignment rod configured to align said plurality of cassettes with each other and with respect to said cover plate.
- [c5] 5. The system of claim 4 wherein said alignment groove is defined by a surface that conforms to an outer surface of said alignment rod.
- [c6] 6.The system of claim 4 wherein said alignment groove is integrally molded into an underside of said cover plate.
- [c7] 7.The system of claim 4 wherein said alignment groove comprises prongs having inner surfaces that substantially conform to an outer surface of said alignment rod.
- [c8] 8.The system of claim 7 wherein said prongs are positioned to snappingly receive said alignment rod.
- [c9] 9.The system of claim 7 wherein said prongs each contain a rounded surface to

facilitate movement of said prongs around said alignment rod when said alignment groove engages said alignment rod.

- [c10] 10.A precision location system between an actuator accessory and an operating mechanism in a circuit breaker, the circuit breaker including a plurality of cassettes mounted within a circuit breaker housing, the housing including a cover plate, the precision location system comprising:  
an alignment rod extending between the plurality of cassettes and the operating mechanism;  
a means for securing the actuator accessory to the cover plate; and  
a means for securing the cover plate to said alignment rod, said means for securing the cover plate includes means for aligning said actuator assembly with said operating mechanism.
- [c11] 11.The precision location system of claim 10 wherein said means for aligning said actuator accessory comprises an alignment groove disposed on the cover plate, said alignment groove having a surface that matingly corresponds with a surface of said alignment rod.
- [c12] 12.The precision location system of claim 11 wherein said alignment groove comprises prongs, said prongs having surfaces that matingly correspond with said surface of said alignment rod and snappingly engage said alignment rod to secure the cover plate to said alignment rod.
- [c13] 13.A precision location system for a circuit breaker utilizing a phase cassette concept comprising:  
a cover configured to align an actuator accessory with an operating mechanism in operable communication with a plurality of single-pole breaking units;  
a first alignment feature in operable communication with said cover, said first alignment feature configured to align said plurality of cassettes with each other and with respect to said cover; and  
a second alignment feature configured to align said actuator accessory with said operating mechanism, said second alignment feature configured in said cover to position said actuator accessory therewith.

- [c14] 14.The system of claim 13, wherein said first alignment feature includes an alignment rod extending through said plurality of single-pole breaking units and said operating mechanism to interconnect and align said plurality of single-pole breaking units, said first alignment feature further includes an alignment groove configured in said cover, said alignment groove configured to receive said alignment rod and align said operating mechanism with said actuator accessory.
- [c15] 15.The system of claim 13, wherein said second alignment feature includes a location tab extending from said cover configured to be received in a complementary configured cavity in said actuator accessory for proper positional alignment therebetween.
- [c16] 16.The system of 13, wherein said operating mechanism is cooperably connected to each rotary phase cassette of said plurality of single-pole breaking units via a connecting rod extending therethrough, said actuator accessory secured to said cover being cooperably connected to said circuit breaker operating mechanism.
- [c17] 17.A circuit breaker having a precision location system between an actuator accessory and an operating mechanism in the circuit breaker, the circuit breaker comprising:  
a plurality of single-pole breaking units positioned adjacent each other and in operable communication with the operating mechanism; and  
a cover plate configured to receive the actuator accessory, said cover plate further configured to receive the operating mechanism, and said cover plate configured to align the actuator accessory with said operating mechanism when the actuator accessory and operating mechanism are received in said cover plate.
- [c18] 18.The circuit breaker of claim 17 wherein each single-pole breaking unit of said plurality of single-pole breaking units positioned adjacent each other comprises:  
a box,  
a first contact housed within said box, and

a rotary contact arm pivotally supported within said box by a rotor, said rotary contact arm having a second contact disposed thereon wherein said rotary contact arm is rotatable between a first position wherein said first contact engages said second contact and a second position wherein said first contact is not engaged with said second contact;

at least one alignment rod disposed laterally within said plurality of single-pole breaking units configured to maintain said boxes such that said boxes are rectilinearly oriented relative to each other;

at least one connecting rod extending laterally through said rotors of each single-pole breaking unit in said plurality of single-pole breaking units configured to interconnect said rotors;

a cover plate engageable with said at least one alignment rod;

a circuit breaker operating mechanism cooperably connected to said at least one connecting rod, said circuit breaker operating mechanism moving said rotary contact arm between said first position and said second position; and

an actuator secured to said cover plate and being cooperably connected to said circuit breaker operating mechanism for triggering the circuit breaker operating mechanism.

- [c19] 19.The circuit breaker of claim 18 wherein said cover plate has a first protrusion depending therefrom, said first protrusion containing an alignment groove configured to engage said alignment rod.
- [c20] 20.The circuit breaker of claim 19 wherein said alignment groove contains a surface that substantially conforms to an outer shape of said alignment rod.
- [c21] 21.The circuit breaker of claim 19 wherein said cover plate contains a second protrusion depending therefrom at a point distal from said first protrusion and wherein said second protrusion contains an alignment groove configured to engage said alignment rod.
- [c22] 22.The circuit breaker of claim 19 wherein said alignment groove is configured to snappingly engage said alignment rod.
- [c23] 23.The circuit breaker of claim 18 wherein said actuator contains a location tab

for precisely mounting said actuator on said cover plate.